

# Work Order ID 50983

July 28, 2009 1:55:43 PM



Page 1

Item ID: D206-667-203

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Aft

Start Date: 7/30/09 Start Qty: 1.00



Cust Item ID:

Required Date: 8/14/09 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan: *W*

Date: *09-09-27* Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D206-667-243	Rev C

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D206-667-203 CHG003

*S. S. 09/10/22*

*HJ for BG 09/10/22*

110

0.00



BENDING MACHINE - CROSSTUBES

CNC Bend 2

Memo

0.00

CNC Alpha 160 Bender

Bend tube as per Dwg D206-667-243 using CNC bender program 206L-AF and Folio FT

*(IX)*

*Q*

*MS 09-09-29*

120

QC15- Crosstube Dimensional Check

0.00



QC

Memo

0.00

Quality Control

*2) S. S. 09/10/22*

*(XU)*

*φ*

# Work Order ID 50983

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Page 2

Item ID: D206-667-203

Accept

Revision ID: C

Item Name: Crosstube Aft

Start Date: 7/30/09 Start Qty: 1.00

Required Date: 8/14/09 Req'd Qty: 1.00

Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: Date: Tooling: Date:

QC: Date: SPC (Y/N): Date:

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

130



Crosstubes

Crosstubes

Crosstubes

Memo

1-Drill pilot holes in tube using drill Jig DT8583 & DT8584 as per Dwg D206-667-243. Drill all (3) top holes. 2-Drill and Ream all holes in tube to finish size using drill Jig DT8583 & DT8584 as per Dwg D206-667-243 Check dimensions between holes on all

0.00

0.00

140



HandFXtube

Hand Finishing Crosstubes

Crosstubes Chemical Conversion

Memo

0.00

0.00

150



QC

Quality Control

QC3- Inspect Part Finish

Memo

0.00

0.00

2) Serial 10101

(K)

2

WIP 09-09-30

1

2

AWM 9-9-30

(K)

2

# Work Order ID 50983

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Item ID: D206-667-203

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Setup Start



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Item Name: Crosstube Aft

Start Date: 7/30/09 Start Qty: 1.00



Cust Item ID:

Required Date: 8/14/09 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

160

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

27 509/10/09



170

Outsource process - NDT per QSI038 4.1

0.00



Outsource2

Memo

0.00

Outsource process - NDT

Liquid Penetrant Inspection as per QSI 038Or ☐ Issue P/O: 10567 ☐ LPI as per ASTM 1417 ☐ Level 2 Attach copy of NDT results to work order

CL 09/10/09 ①

180

Packaging

0.00



Packaging

Memo

0.00

Packaging

Ensure copy of NDT results attached to work order.

Per 10/5/09

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Item ID: D206-667-203

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Setup Start



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Stop



Item Name: Crosstube Aft

Start Date: 7/30/09 Start Qty: 1.00



Cust Item ID:

Required Date: 8/14/09 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190 	QC5- Inspect part completeness to step on W/O	0.00							
QC Quality Control	Memo Ensure results are as per Dwg D206-667-243	0.00				<i>mm</i>	09	10	13 ①
200 	SprayPaint	0.00							
SprayPaint Spray Painting	Memo 1-Prime inside and outside crosstube as per QSI 005 4.2 crosstube with White Imron as per QSI 005 4.2 Time: 10:00 □Finish Time: 10:30 □PAINT: □Start Time: 2:30 □Finish Time: 3:30	0.00				<i>mm</i>	09	10	19 ①
210 	QC14- Inspect Spray Paint	0.00							
QC Quality Control	Memo Wrap in plastic bag to protect from scratches	0.00				<i>IT</i>	09	10-20	

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Item ID: D206-667-203

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Aft

Start Date: 7/30/09 Start Qty: 1.00



Cust Item ID:

Required Date: 8/14/09 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
220 	Crosstubes	0.00				<i>ml</i>	<i>09</i>	<i>10</i>	<i>21 (1)</i>
Crosstubes	Memo	0.00							
Crosstubes	1-Install nut plates as per Dwg D206-667-243.								
230 	Skidtubes	0.00				<i>ml</i>	<i>09</i>	<i>10</i>	<i>20 (1)</i>
Skidtubes	Memo	0.00							
Skidtubes	1-Install support using 0.03" to 0.06" thick layer of magnobond 6398 per QSI 015. Let cure for 12h after installation and prior to packaging. Note: (3) top holes should be facing up. <input type="checkbox"/> A/R Magnobond 6398: <i>11241748-01/2011</i> Install supports and clamps as								
240 	QC5- Inspect part completeness to step on W/O	0.00				<i>(40)</i>	<i>/</i>		
QC	Memo	0.00							
Quality Control									

*2) 8 or 10/22*

# Work Order ID 50983

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Item ID: D206-667-203

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Aft

Start Date: 7/30/09

Start Qty: 1.00



Cust Item ID:

Required Date: 8/14/09

Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

250



Packaging

Packaging

Pick Kit

0.00

Memo

0.00

9/10/22 *sf*

260



QC

Quality Control

QC4- 100% Inspect kits for completeness

0.00

Memo

0.00

2/8/20/22

*(X) f*

270



Packaging

Packaging

Packaging

0.00

Memo

0.00

Identify and pack for shipping as per PPP D206-667-203 Location: \_\_\_\_\_

□ PPP Rev: *D*

*7/29/2022*

**Work Order ID 50983**

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Item ID: D206-667-203

Accept



Setup Start



Revision ID: C

Stop



Item Name: Crosstube Aft

Start Date: 7/30/09

Start Qty: 1.00



Cust Item ID:

Required Date: 8/14/09

Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

09/10/23

MF 09-10-30

# Picklist Print

July 28, 2009 1:55:42 PM

Page 1

Work Order ID: 50983

Parent Item: D206-667-203RevC

Parent Item Name: Crosstube Aft

Comments:

Start Date: 7/30/09

Required Date: 8/14/09

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	--------------------------	---------------	----------------	--------

AN5-10A

Purchased

No

260

Each

58.0000

10.0000

Bolt

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

58

107013

8

110363

2

111425

10

111819

38

AN5-32A

Purchased

No

260

Each

111.0000

4.0000

Bolt

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

111

106242

3

106519

4

110363

17

111916

37

112082

50

112314 SV

112082 7/30/09 SV



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

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Work Order ID: 50983

Parent Item: D206-667-203RevC

Parent Item Name: Crosstube Aft


Comments:

Start Date: 7/30/09

Required Date: 8/14/09

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
S AN5-34A  Bolt		Purchased	No			260	Each	50.0000	4.0000			

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST	50
104679	2
105408	1
107013	2
111425	45

111425 SP

S AN960JD516



Washer

Purchased

No

100

Each

1,301.000

18.0000



112794 9/10/22 SP

Warehouse Loc Qty Loc Code

Location

Main Warehouse

ST	1301
100564	2
106167	6
107534	34
107959	43
108246	46
108672	2
109059	49
109752	22
110363	46
110523	57
111279	44
112082	950

112794 9/10 SP

# Picklist Print

July 28, 2009 1:55:42 PM

Work Order ID: 50983

Parent Item: D206-667-203RevC

Parent Item Name: Crosstube Aft



Comments:

Start Date: 7/30/09

Required Date: 8/14/09

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D206-667- 203TRNRevC		Manufactured	No			220	Each	2.0000	1.0000			
 												
Crosstube Turning Detail												

Warehouse                      Loc Qty                      Loc Code  
Location

Main Warehouse

FG

2

45623

1

45625

1

D2873-043RevA

Manufactured

No

220

Each

53.0000

2.0000



Nut Plate Assembly

Warehouse                      Loc Qty                      Loc Code  
Location

Main Warehouse

ST

53

45370

18

45422

15

50002

20

*SK*

*(IX) MB 07-09.24*

*MB 091021*

# Picklist Print

July 28, 2009 1:55:42 PM

Work Order ID: 50983

Parent Item: D206-667-203RevC

Parent Item Name: Crosstube Aft

Comments:

Start Date: 7/30/09

Required Date: 8/14/09

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D2873-045RevA		Manufactured	No			220	Each	71.0000	2.0000			

Nut Plate Assembly

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	71	
45210	11	
<u>46772</u>	20	
50001	40	

*ml 09 10 21*

D2892-1RevA

Manufactured No

230

Each

48.0000

2.0000



Support

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
<u>Location</u>		
Main Warehouse		
ST	48	
35581	4	
<u>41986</u>	20	
42785	20	
45936	4	

*ml 09 10 20*

# Picklist Print

July 28, 2009 1:55:42 PM

Work Order ID: 50983

Parent Item: D206-667-203RevC

Parent Item Name: Crosstube Aft


Comments:

Start Date: 7/30/09

Required Date: 8/14/09

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D3595-063-450RevA		Manufactured	No			230	Each	47.8000	4.0000			
												
RUBBER CUSHION												

Warehouse                      Loc Qty                      Loc Code  
Location

Main Warehouse

ST                                      47.8

~~38959~~                                      2

43210                                      4.8

~~46465~~                                      41

MS20601-AD4W10

Purchased

No

230

Each

241.0000

14.0000



RIVET

Warehouse                      Loc Qty                      Loc Code  
Location

Main Warehouse

ST                                      241

110665                                      100

111177                                      141

ml 09 10 20

ml 09 10 21

# Picklist Print

July 28, 2009 1:55:42 PM

Work Order ID: 50983



Parent Item: D206-667-203RevC



Parent Item Name: Crosstube Aft

Start Date: 7/30/09

Required Date: 8/14/09

Comments:

Start Qty: 1.00

Required Qty: 1.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
MS21042L5  Nut		Purchased	No			260	Each	641.0000	4.0000			

Warehouse                      Loc Qty                      Loc Code  
Location

Main Warehouse

ST    641

110382    10

111127    131

111636    500

111636

MS21920-22



Purchased

No

260

Each

114.0000

4.0000



9/10/02

Clamp(per MIL-DTL-8783C)

Warehouse                      Loc Qty                      Loc Code  
Location

Main Warehouse

ST    114

109495    14

110260    50

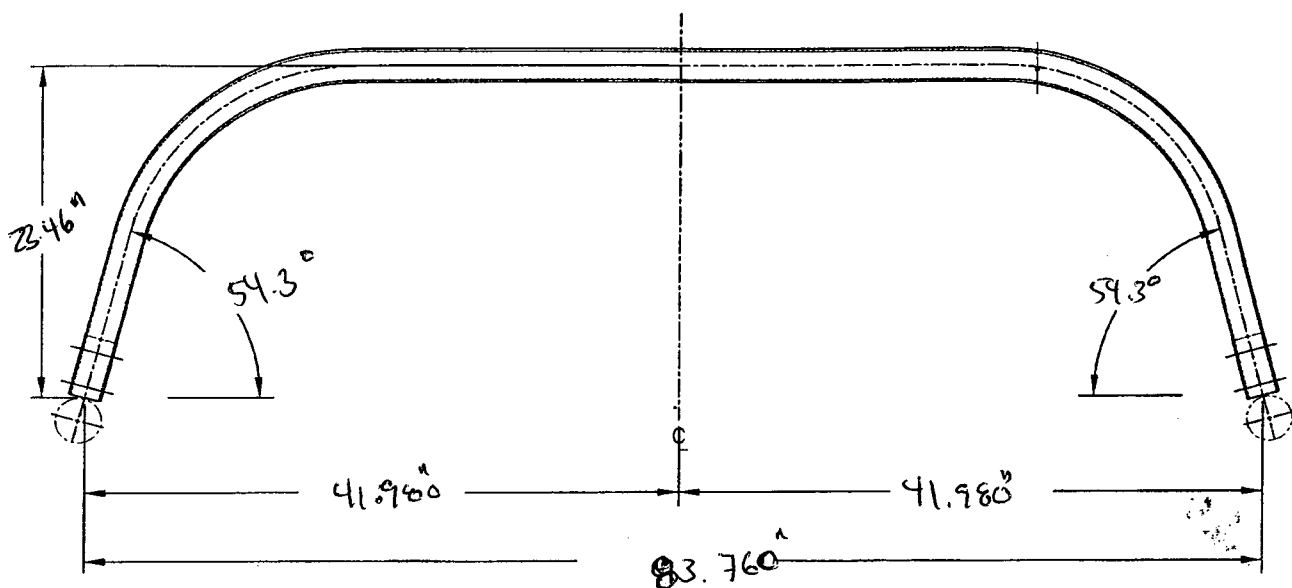
111210    50

ml 09 10 20

DART AEROSPACE LTD		Work Order:	50983
Description: Crosstube High Aft (206L)		Part Number:	D206-667-203
Inspection Dwg: D206-667-243		Rev: <del>B</del> C	Page 1 of 1

09.09.21

Required Dimension	Min	Max
Height	23.46	23.58
1/2 Span	41.86	41.98
Angle	54	56
Total Span	83.72	83.96



Comments

QC15 Inspection	S
Date	09/09/29

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	[Signature]

Item	Qty -243	Part Number	Description
1	X	D206-667-243	CROSSTUBE ASSEMBLY (206L HIGH AFT)
2	1	D6004-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2892-1	SUPPORT
6	4	D3595-063-450	RUBBER CUSHION
7	4	MS21920-22	CLAMP
8	14	MS20601AD4W10	RIVET (OR NAS9302B-4-10)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299- 947-100, TYPE II, CLASS 2 ADHESIVE)

W/O  
50983

#### GENERAL NOTES:

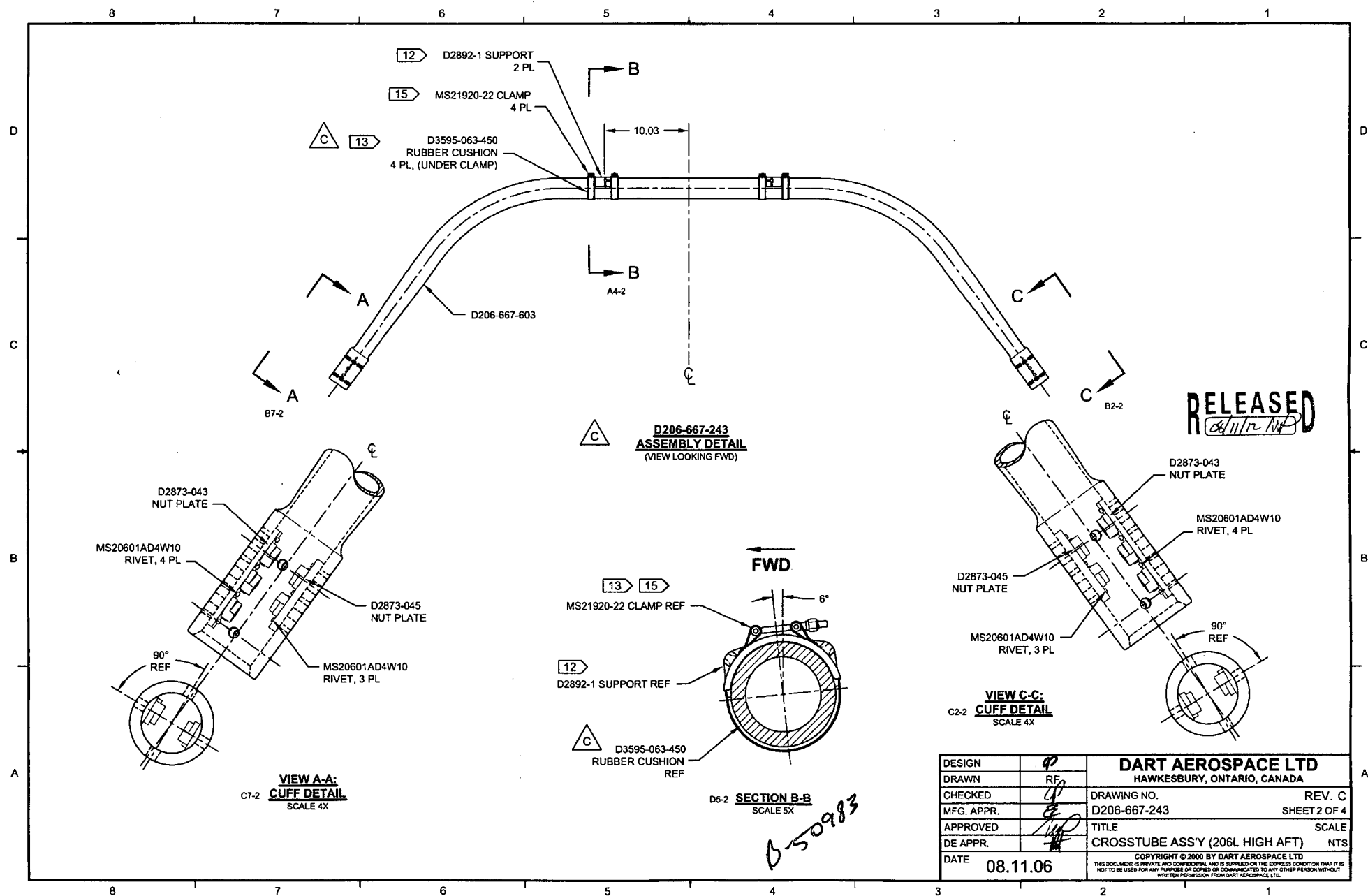
- 1) MATERIAL: MANUFACTURED FROM D6004-115  
FINISHED LENGTH = 104.91±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-243" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 21.9 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2892-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-22 CLAMPS WITH D3595-063-450 RUBBER CUSHIONS TO SECURE THE D2892-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN.-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

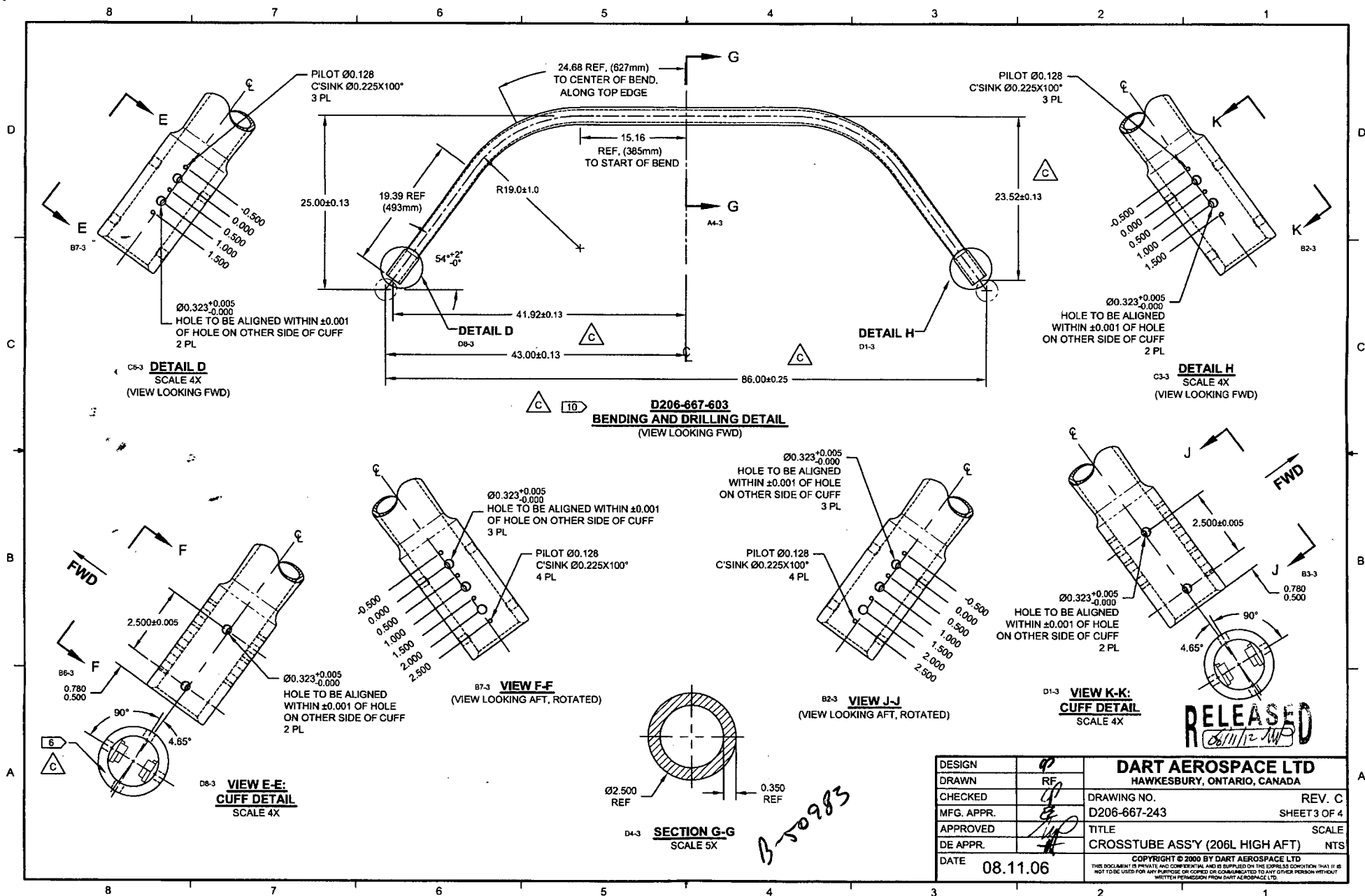
RELEASED  
B/M/R

C	REVISE GENERAL NOTES/PART LIST (ZN D7-1); REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS. D3595-063-450 WAS D2856-400-773 (ZN D6-2 & A5-2); REMOVED REF. & ADD TOLERANCES (ZN 4-3, C5-3, D3-3); RELOCATED FLAG #6 (ZN A8-3) PER NCR 210; MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4.	RF	08.11.06
B	ADD HOLES AND NUT PLATES FOR COMPATABILITY WITH BHT/AA SKUDTUBES	PH	05.07.26
A	NEW ISSUE	CP	00.11.17
REV.	DESCRIPTION	BY	DATE
DESIGN	90		
DRAWN	RF		
CHECKED	CP		
MFG. APPR.	9		
APPROVED	140		
DE APPR.	14		
DATE	08.11.06		

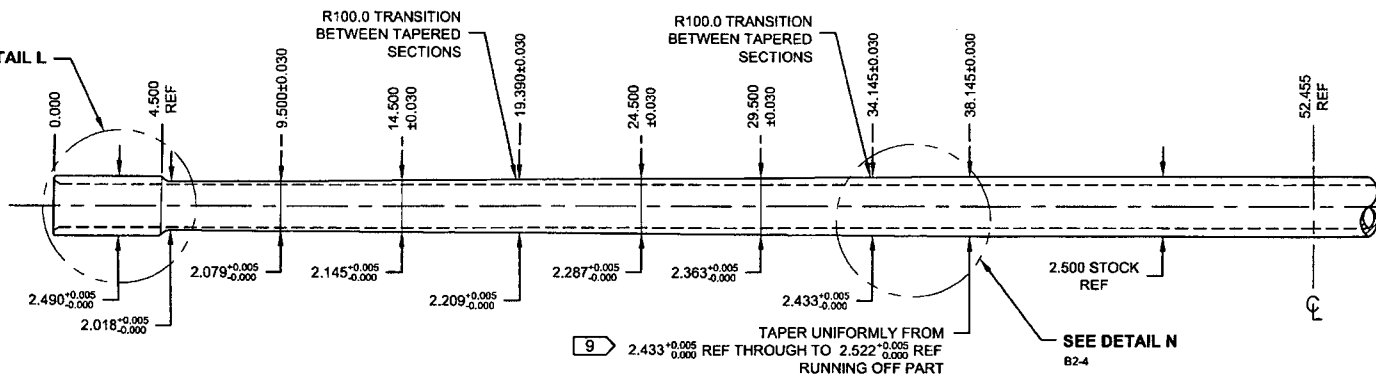
<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D206-667-243	REV. C SHEET 1 OF 4
TITLE CROSSTUBE ASS'Y (206L HIGH AFT)	SCALE NTS
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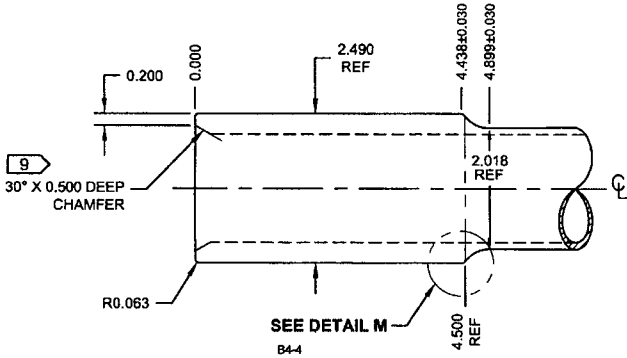




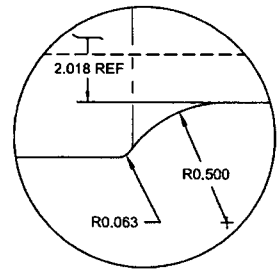
SEE DETAIL L  
B7-4



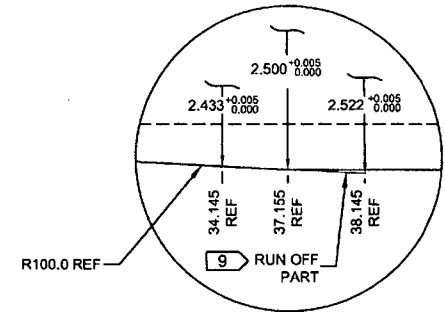
**TURNING DETAIL**



**DETAIL L: CROSSTUBE CUFF**  
NOT TO SCALE



**DETAIL M: CUFF TRANSITION**  
NOT TO SCALE



**DETAIL N: TAPER RUN-OFF**  
NOT TO SCALE

**RELEASED**  
08/11/12

DESIGN	47	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	CP	DRAWING NO.	REV. C
MFG. APPR.	EP	D206-667-243	SHEET 4 OF 4
APPROVED	EP	TITLE	SCALE
DE APPR.	EP	CROSSTUBE ASS'Y (206L HIGH AFT)	NTS
DATE	08.11.06	COPYRIGHT © 2000 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

17-50983



## LIQUID PENETRANT TEST REPORT

P- 1530

PAGE 1 OF

TIME AM ☒ P

CLIENT DART AEROSPACE DATE OCT-8-2009  
ATTENTION LINDA/CHANTEL ACUREN JOB NO. 188-08-001567  
ADDRESS 1270 46th DEEP ST, HAWKESBURY PO/NO. - 10557  
ON. KGH LK7 WORK LOCATION SAME  
ACCEPTANCE STD. ASPM 1417 REV./DATE 200  
PROJECT F.P.I. on CROSS TUBES AND MACHINED PARTS  
ITEM(S) EXAMINED 10 CROSS TUBES  
13 MACHINED PARTS

JOB DESCRIPTION PROCEDURE NO. LT- REV./DATE TECHNIQUE NO. LT- REV./DATE  
PART NO. STAINLESS STEEL MATERIAL ALUMINUM THICKNESS N/A  
SCOPE WET FLUORESCENT LIQUID PENETRANT INSPECTION  
CARRIED OUT 100% EXTERNAL

## TEST DETAILS

METHOD ☒ FLUORESCENT ☐ VISIBLE ☒ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMUL  
FAMILY BRAND MASNA FLUX BLACK LIGHT S/N 16459 ☐ OUTPUT > 1000  $\mu$ W/cm<sup>2</sup> ☐ AMBIENT <  
PENETRANT 2L-67 MINIMUM DWELL TIME 45 MIN. LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ 5  
PENETRANT REMOVER H2O MINIMUM DRY TIME >10 MIN. OTHER LABING  
DEVELOPER SKD 52 MINIMUM DWELL TIME 10 MIN. LIGHT METER S/N CAL DUE DATE  
DEVELOPER TYPE ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY

## TEST SURFACE

SURFACE CONDITION ☐ AS GROUND ☐ AS WELDED ☒ MACHINED ☐ SHOT BLASTED ☐ CLEAN BARE ME  
SURFACE TEMPERATURE ☐ < -4°C/ 20°F ☐ -4°C/ 20°F TO 10°C/ 50°F ☒ 10°C/ 50°F TO 52°C/ 125°F ☐ > 52°C/ 125°F

RESULTS- ☒ METRIC ☐ IMPERIAL

1 - W.O. 51939 - CROSS TUBE X  
1 - W.O. 51940 - CROSS TUBE /  
1 - W.O. 52054 - CROSS TUBE /  
1 - W.O. 52055 - CROSS TUBE /  
~~1 - W.O. 51297 - CROSS TUBE~~ /  
1 - W.O. 51937 - CROSS TUBE /  
1 - W.O. 51938 - CROSS TUBE /  
1 - W.O. 52052 - CROSS TUBE /  
1 - W.O. 52053 - CROSS TUBE /  
1 - W.O. 50982 - CROSS TUBE /  
1 - W.O. 50983 - CROSS TUBE /  
13 - W.O. 51297 - STUDS /

ALL PARTS EXAMINED. HAVE  
BEEN FOUND ACCEPTABLE  
TO STANDARD.

NM 09 10 13

## Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

## Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, express or implied, is made or intended by Acuren Group Inc.

## SIGNATURES

CLIENT REPRESENTATIVE MATTHEW MURDOCH DTR # E-27843  
TECHNICIAN (SIGNATURE): [Signature] SIGNATURE  
NAME (PRINT): MIKE JOHNSTON REPORT REVIEWED BY:  
1<sup>st</sup> TECHNICIAN 2<sup>nd</sup> TECHNICIAN  
CGSB LEVEL 2 SNT LEVEL 2 CGSB LEVEL SNT LEVEL  
CGSB REG. NO. 60660 CGSB REG. NO.